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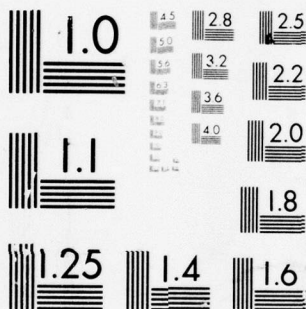


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CIVIL DEFENSE FOR THE SCHOOLBOY

By: G. I. Goncharenko

From the Author

Young friend! Today you are still sitting at your desk, studying in school, but the years will pass and you will enter your labor life. Today you have taken your first step toward active social life - you are a pioneer - and tomorrow youth will become the komsomol, you will receive your passport and will already be a full-fledged citizen of the Soviet Motherland.

Constant readiness to defend the Socialist Motherland is the highest manifestation of the patriotic duty of each citizen of the Soviet Union. Active aid to the Soviet Armed Forces, and to the matter of strengthening the defensive capability of our State is primarily related to training ideologically hardened, technically skillful, strong and enduring generation.

Civil Defense is a component part of the defense of our State. Strengthening Civil Defense and actively participating in its measures is the duty of every Soviet man, including the schoolboy.

This short booklet will familiarize you, young friend, with Civil Defense and will give some practical advice which you can use in case of the threat of the enemy's using weapons of mass destruction and in rendering aid to comrades in centers of destruction.

Introduction

A few words about how man's friend and enemy - the atom - entered human life. The word "atom" is very old - over 2000 years old. Back in the IV - V Centuries BC, the philosophers of Greece considered that all matter, i.e., the human environment, consists of the very smallest particles which were called atoms (atom in translation into Russian means indivisible). The atom has a structure similar to that of our Solar System. A relatively large "Sun" - the nucleus - is in its center. The nucleus of the atom consists of protons and neutrons. Around this nucleus - "the atomic Sun" rotate diminutive "planets" in certain orbits, as in the Solar System. They are so small that if one could place one proton or one neutron on a single stage of the scales, then on the other stage one would have to place two thousand electrons to balance it. But it is namely this particle that has made possible the appearance of electricity, radio, television, sound pictures, the electron microscope, and gigantic computers which solve the most complex mathematical problems in a few seconds.

The electron and the proton are charged particles. The proton has a positive charge and the electron has a negative charge. The neutron - a neutral particle - carries no electrical charge and therefore has the

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greatest penetrating capacity. It is namely this capacity of the neutron to penetrate the dense electrical barrier which surrounds the nuclei of atoms that has given man the key to the atomic nucleus and has made it possible to split uranium-235. We are indebted to the neutron for the coming of a new era - the atomic era - on the Earth.

The first atomic fire was ignited on 2 December 1942 in a dark building below the stands of Stagg Field Stadium of the University of Chicago, where the atomic furnace - the "boiler", as it was then called had been built. The scientific experiment conducted there made possible the creation of the atomic bomb.

The atomic bomb is the product of the greatest concentration of intellectual efforts of many scientists and investigators in the entire history of mankind. Millions of man-hours were spent on the development of a device which releases miraculous energy in a single instant.

On 6 August 1945 the American Imperialists used the forces of the atom against the peaceful population of Japan, dropping an atomic bomb on Hiroshima. According to incomplete data, the number of casualties in Hiroshima comprised about 100 thousand killed and missing and 38 thousand severely and lightly wounded. Two days later - on 8 August - a second Japanese city - Nagasaki - was subjected to barbaric destruction.

The atomic bomb made the Imperialists intoxicated with a thirst for universal power and provided them with a tool to pretend to world domination. The former American president Truman declared in December of 1945 that the "victory we have won has imposed upon the American people the burden of responsibility for the future Government of the World".

The barbaric war in Vietnam today merely confirms that the American predator, impudently trampling the rights of peoples, is true to his imperialistic goals. Were it not for the Soviet Union and the countries of the Socialist camp - the forces with which the USA is forced to reckon - they would long ago have used atomic weapons against the Vietnamese patriots as was done in the war against the Japanese people.

The Sword of Damocles - Weapons of Mass Destruction

Damocles was the court physician of King Dionysius. He envied the king very much, dreamed of an easy and beautiful life, complete comfort and heavenly pleasures. According to legend, King Dionysius decided to teach this envious person a good lesson. He invited Damocles to a feast and unexpectedly seated him on his throne. Damocles's happiness was brief. Having glanced upward, he became terrified: over his head hung a sword by a horse hair.

By this, the king wished to show what a vast danger the life of a man is sometimes subject to despite the outward, seeming good fortune

and idyllic serenity...

The appearance of nuclear weapons, their rapid improvement and spread in the world have created a constant danger for mankind. This danger can be called the modern sword of Damocles. And ideally speaking, nuclear weapons essentially have three swords of Damocles: light radiation, the shockwave, and radioactivity. Two more are added to these three swords in case of the appearance of modern warfare: chemical poisons and bacteriological weapons.

Nuclear Weapons

Nuclear weapons are based on the use of nuclear energy which is liberated during a reaction that has the character of an explosion.

If the explosion occurs on the Earth or quite near its surface, then part of the energy of the explosion is imparted to the surface of the ground in the form of seismic vibrations. A phenomenon appears which is reminiscent of an earthquake with respect to its characteristics. As the result of this explosion seismic waves are formed which propagate through the layer of earth over extremely great distances. The destructive effect of the wave is limited to a radius of a few hundred meters.

A bright flash of light appears as the result of the extremely high temperature of the explosion. The intensity of the flash is hundreds of times greater than the intensity of the Sun's rays which strike the Earth. A vast amount of heat and light is liberated during the flash. The light radiation causes spontaneous combustion of inflammable materials and burns on the skin of people within a radius of many kilometers.

Radiation appears during the nuclear explosion. It lasts for about a minute and has such high penetrating capacity that thick and reliable shelters are required at close range for protection against it.

The power of the explosion of nuclear devices is conventionally characterized by the weight of a conventional explosive - TNT - whose explosion is approximately equivalent to the explosion of nuclear devices with respect to its destructive effect. This value is usually expressed in thousands of tons (kilotons) or millions of tons (megatons) of TNT and is called the TNT equivalent of the nuclear charge.

Thus, for example, bombs were dropped on the Japanese cities of Hiroshima and Nagasaki, to which we have already referred, with a TNT equivalent of 20 kilotons (kt). The power of the explosion of such a bomb equated to the power of the simultaneous explosion of 20 thousand tons of TNT. In order to deliver this bomb load, at that time 2 thousand of the most powerful bombers of the B-29 ("Flying Fortress") type would have been required.

Depending on the character and target of the enemy attack, nuclear explosions are subdivided into atmospheric, ground, underwater and underground. Air explosions can be carried out at an altitude of several hundred meters, ground surface (water surface) - on the surface of the ground (water), underground (underwater) - under the ground (water).

As was already stated, the nuclear explosion has four harmful factors: the shockwave, light radiation, penetrating radiation and radioactive contamination of terrain.

The shockwave. During the nuclear explosion, a vast quantity of energy is almost instantaneously liberated in a small spherical space, which leads to a sharp increase in temperature and pressure of the surrounding air.

The vigorous expansion of the compressed incandescent gases creates a strong condensation on its outer surface. It rapidly propagates in the atmosphere similar to waves on the surface of water from a thrown rock. The compression wave moves so rapidly that it is called a shockwave. One-half of all of the energy of the nuclear explosion is imparted to the shockwave. The greater part of the destruction caused by a nuclear explosion is caused by the shockwave. The shockwave propagates at supersonic velocity. The degree of destructive force of the shockwave is determined by the magnitude of excess pressure in its front, the unit of measurement for which is the pressure in kilograms per 1 cm² of area (kg/cm²). Very severe injuries of people outside of shelters appear with pressure in excess of 1 kg/cm².

Proportional to distance from the location of the explosion, excess pressure gradually drops and the degree of destruction decreases. Thus, during the explosion of the atomic bombs in the cities of Hiroshima and Nagasaki, all buildings were destroyed in a radius of 800 - 1000 m. Buildings in a radius of 1000 - 1500 m were strongly and moderately damaged, and in a radius of 1500 - 2500 m mild damage predominated basically. Further than 2500 m were partial damages.

Besides the direct effect of the shockwave, injuries can also be inflicted by flying fragments of buildings, rocks, and other objects. The character of action of the wave is also influenced by the effect of terrain relief and vegetation. When a shockwave encounters the leading slope of a hill, its pressure can increase almost twofold (on slopes with a grade of 30 - 45°). On the reverse slope of the hill pressure will be less than in plain terrain beyond the hill. In the Japanese city of Nagasaki, which is located on hills, structures were destroyed in a significantly smaller area than in Hiroshima, which is located in flat terrain.

It is vital to note another feature of the shockwave. It can, like

water, "flow" into closed areas not only through windows and doors, but also through small openings and even cracks. This leads to the destruction of walls and equipment inside buildings and to the injury of people inside them.

During a nuclear explosion with a power of 3 megatons (mt) one can be mildly injured at a distance of 6 - 10 km from the center of the explosion, moderately injured at 5 - 7 km, and severely injured at 4 km. From the cited examples about the harmful properties of the shockwave, one can draw the following conclusion: the best protection against it is underground and buried structures.

Light radiation. A vast mass of energy liberated suddenly during the nuclear explosion forms a luminiscent fireball. Its temperature is about the same as the temperature inside the Sun. About one-third (30 - 35%) of the energy of the nuclear explosion is expended on light radiation.

Intensive light radiation is capable of igniting fuel, causing multiple fires and skin burns, injury to the eyes and temporary blindness in people and animals located in an open place within a radius of many kilometers from the epicenter of the explosion.

The harmful effect of light radiation is determined by the radiant pulse, measured in calories per square centimeter (cal/cm^2) of surface perpendicular to the direction of its propagation. The pulse decreases proportional to the decrease in distance from the center of the explosion.

First degree burns (mild) are caused by a radiant pulse of 2 - 4 cal/cm^2 ; second degree (moderate) - 4 - 10 cal/cm^2 , and third degree (severe) - 10 - 15 cal/cm^2 . Light radiation propagates only in straight lines and any opaque obstacle can serve as protection against its effect.

In fog, rain, or during snow the harmful effect of light radiation is slight.

Penetrating radiation. In addition to the shockwave and light radiation, nuclear explosions are also characterized by another harmful factor - radiation. It can act on people differently: in some it can cause instantaneous death, in others it can lead to severe illnesses, and in still others it can leave hard-to-detect injuries in the body. Penetrating radiation is an invisible and imperceptible flux of gamma rays and neutrons emitted from the zone of the nuclear explosion. It is effective for a short time: 10 - 15 seconds from the moment of the explosion.

In propagating in any medium, gamma rays and neutrons ionize its atoms. As the result of ionization of atoms of the human body, the

normal vital activity of cells and organs within it is disrupted, which leads to illness with radiation sickness. The degree of the effect of radioactive radiation on the human body depends basically on its dose, as well as the general physical condition. Three degrees of radiation sickness are distinguished according to the obtained dose:

a) mild (first degree) - with a dose of radiation ranging from 100 to 200 roentgens (r);

b) moderate (second degree) - with a dose of radiation ranging from 200 to 300 r;

c) severe (third degree) - with a dose of radiation over 300 r.

With small doses of radiation, the signs of radiation sickness can appear in a few hours, and with 400 r and above - immediately after irradiation. The first symptoms of the sickness are: nausea, vomiting, diarrhea, headache, general lethargy and weakness.

Protection against penetrating radiation is based on the physical capacity of different materials to weaken the intensity of radioactive emission. The heavier the material and the thicker its layer, the more reliable the protection. Thus, radiation is weakened twofold during passage through a layer of concrete 10 cm thick, a layer of dirt 14 cm thick, or a layer of wood 25 cm thick. People in shelters receive a significantly smaller dose of radiation than those outside the shelter the same distance from the explosion.

Radioactive contamination of terrain. During the nuclear explosion, radioactive particles (fission products of the warhead nuclei, undecayed particles) are in the fireball. In rising upward, the fireball is enveloped in fog and smoke and in a few seconds changes into a mushroom cloud. The ascending streams of air capture dirt, small objects, and materials from the ground, taking them up with the cloud, and they become radioactive. Thus, during a ground level nuclear explosion a vast amount of dust is raised 10 - 20 km and higher. The largest particles fall out of the cloud directly in the region of the explosion in the first 30 - 40 minutes after the explosion, but the greater part of the particles remains in the cloud and is moved by air currents for hundreds and thousands of kilometers.

On 1 March 1954 the Americans conducted a nuclear explosion on the surface of Bikini Atol in the Pacific Ocean. The radioactive cloud that formed was dispersed by the wind over vast areas. A Japanese ship was located 160 km away from the location of the explosion. Three hours after the explosion it was covered by radioactive dust. Already by the evening

of that day, the Japanese fishermen began to complain of headache, loss of appetite and irritation of the eyes. Contamination by radioactive dust was also observed on ships 1600 km away from the explosion.

The shapes and dimensions of the radioactive "track" depend on the type and power of the nuclear explosion, the direction and velocity of the wind at different altitudes. The rate of fallout of particles of radioactive dust is directly dependent on their density and size.

The air, terrain, buildings, structures, reservoirs, crops, pastures and all ground surface objects can be contaminated by radioactive materials.

It is extremely dangerous to be in contaminated terrain. People and animals are subjected to constant external irradiation. When inhaling air, eating food and drinking water, radioactive substances can enter the body. As the result of external and internal irradiation, man and animals become ill with radiation sickness.

When protecting people and animals, it is also vital to take into account certain specific features of radioactive substances. They do not have any outward signs and they can be detected only by the aid of special dosimetric instruments. Radioactive decay cannot be stopped or accelerated by any means or methods. Therefore, the decontamination of terrain and various objects contaminated by radioactive materials can be carried out only by mechanical removal of these objects and soil.

Chemical Weapons

Chemical weapons are conventionally called poisons. They can be employed in the form of gases, liquids, smokes and fogs and are intended for harming people, animals, and contaminating terrain, various structures, industrial equipment, poisoning food products, water and feed.

Poisons were first used as a weapon in the First World War. Many countries of the world have accumulated a large amount of poisons; however they were not widely used in the Second World War. The basic reason for their limited use is that this means is not always an adequately effective weapon.

The injury to people and animals occurs as the result of inhaling contaminated air, from liquid drops of poisons striking the skin or mucous membrane, as well as from the consumption of contaminated food, water and feed. In small doses, poisons are capable of inflicting severe injuries on people and animals.

Depending on the duration of preservation of the basic military

destructive properties, poisons are divided into stable and unstable varieties.

Stable poisons are the slowly evaporating oily liquid poisons of the mustard gas, lewisite, etc., types. By contaminating terrain, they can preserve their harmful properties for many days, and at low temperatures for significantly longer.

The unstable poisons are gas and smoke-forming poisons which rapidly disperse and evaporate and which preserve their harmful properties for a few minutes. They are subdivided into the neuro-paralytic, skin eruptive, general poisonous effect and asphyxiating groups.

The neuro-paralytic poisons affect the central nervous system. These are strong, rapidly acting poisons - Zarin (Sarin), Zomane (Somane), and Tabun. Zarin is a colorless, odorless liquid. Zomane is also colorless, but has a weak aromatic odor. Tabun is a reddish-brown liquid with the weak scent of fruit. These poisons can be used in the vapor-fog and liquid drop states.

The skin-blistering poisons affect the skin. They include mustard gas and lewisite. Mustard gas is a heavy oily liquid dark brown in color with the odor of garlic or mustard. Lewisite is an oily heavy liquid with a strong sharp odor reminiscent of the odor of geranium leaves.

The skin-blistering poisons are employed in the liquid drop state for contaminating terrain and injuring people, but can also be used in the form of fogs. In striking the skin, they cause edema which changes into blisters and then into suppurating ulcers.

Poisons of a generally poisonous effect cause systemic poisoning of the organism. They include prussic acid and chlorcyan. Prussic acid is a rapidly evaporating colorless liquid with the odor of bitter almonds. Chlorcyan is a colorless rapidly evaporating liquid with a sharp, unique odor. The generally poisonous poisons can be employed in the vapor state. They cause injury via the respiratory organs. The signs of injury are: irritation in the throat, dizziness, dyspnea and convulsions.

The asphyxiating poisons affect the respiratory organs. They include phosgene - a colorless gas with the odor of molding hay. The injury is perceived in 4 to 6 hours. The signs of injury are: constriction in the chest, nausea, cough, headache.

One can only detect poisons in the air and in terrain and determine their character by the aid of chemical reconnaissance instruments. But in some cases, the use of chemical weapons can also be established according to external signs. Upon the explosion of chemical bombs and

shells, one hears a dull sound and a white or slightly colored cloud appears which rapidly disperses. If the poisons are employed by the aid of vaporizing aviation devices, behind the tail section of the aircraft dark, rapidly disappearing bands can be seen and drops appear on the surface of the soil, the walls of buildings and structures (on the windward side), on vegetation and objects.

With the slightest suspicion of the use of poisons, one should immediately don the gas mask, as well as other means of protection if they are available - leggings, gloves and coveralls.

Bacteriological Weapons

Modern warfare is characterized by rapidity. This circumstance seemingly excludes the use of bacteriological weapons, for they act quite slowly. But a bacteriological war is still quite realistic and the enemy could use bacteria to contaminate reservoirs, food and feed.

Two basic classes of military bacteriological weapons are distinguished: disease-causing bacteria and toxic bacteria.

The disease-causing bacteriological weapons are characterized by the capacity of the bacteria rapidly to multiply, and consequently, rapidly to affect the infected organism. The bacteria that have penetrated into the organism via the respiratory passages (the nose and mouth) or through openings in the skin can extremely rapidly debilitate the organism. The vectors of the disease-causing microorganisms are insects, rodents and larger animals which spread epidemic diseases. Such diseases include the diseases caused by viruses: the common cold (viral influenza), chicken pox, certain types of fever (including yellow fever), measles, infantile paralysis, meningitis, cholera, trachoma, and viral inflammation of the lungs.

The diseases caused by bacteria are malignant anthrax, dysentery, bubonic plague, diphtheria, gas gangrene, leprosy, scarlet fever, tuberculosis and tularemia.

The fungal diseases do not pose a serious threat for man. The fungi affect plants and grains, inflicting a great loss on agriculture.

Poisonings are caused by toxins and have an extremely severe form. The toxins produced by various kinds of bacteria lead to illnesses and death.

The use of bacteriological weapons can cause massive dangerous diseases over large territories (epidemics and pandemics).

Nuclear, Chemical and Bacteriological Centers of Destruction (Contamination)

The center of destruction (contamination) is the territory with the people, animals, populated places, industrial and agricultural objects located in it that have been subjected to the action of the harmful factors of nuclear, chemical, and bacteriological weapons.

The Nuclear Center of Destruction

The most complex center of destruction is the nuclear one. The people and animals within it can receive various injuries and burns and can also be exposed to the action of penetrating radiation or radioactive contamination. The effect of the shockwave destroys or damages residential and industrial buildings and structures to varying degrees, causes damage to waterlines, sewer systems, gaslines, heating systems and the electric power transmission system. Massive fires start because of light radiation. Terrain in the center of destruction and along the track of propagation of the radioactive cloud is contaminated by radioactive fallout. Upon the destruction of dikes, dams and hydrotechnical facilities by the shockwave, extensive regions are flooded.

The boundaries of the center of nuclear destruction are determined according to the destructive capacity of the shockwave. There can be several zones according to the nature of damage in the nuclear center. The division into zones is due to the magnitude of excess pressure in the front of the shockwave and the destruction caused by it.

The first zone of destruction includes the territory located in a radius with magnitude of excess pressure of 1 kg/cm^2 or more, the second zone - territory where excess pressure ranges from 1 to 0.3 kg/cm^2 , and the third zone - territory with excess pressure ranging from 0.3 to 0.1 kg/cm^2 .

Excess pressure ranging from 0.7 to 0.8 kg/cm^2 is sufficient for the complete destruction of an industrial building made of reinforced concrete. A stone residential building bears a load ranging up to $0.4 - 0.5 \text{ kg/cm}^2$, while a wooden structure is demolished with a pressure ranging from 0.2 to 0.3 kg/cm^2 . Dugout shelters and the simplest shelters of the cellar type bear a load of 1 kg/cm^2 or more, and the same shelters in open terrain will withstand 0.5 kg/cm^2 .

From the above, one can conclude that all reinforced concrete, stone and wooden buildings will be completely demolished in the first zone, but shelters of the cellar and dugout shelter type will be preserved. In the second zone, reinforced concrete and stone structures will be severely damaged while wooden buildings will be completely destroyed. Shelters and

dugout shelters can be flooded and poisoned by gas as the result of breaks in the public utility systems. In the third zone various damages will occur only to wooden buildings but shelters and dugout shelters will be preserved.

The Center of Chemical Contamination

In case chemical weapons are used, people and animals will be injured while sources of water, food products, feed and terrain with all structures will be contaminated by poisons. The dimensions of the center of contamination and the character of injuries within it depend upon the method of employing poisons, the toxicity and stability of the chemicals, terrain relief, weather, etc.

Stable poisons injure people and animals and also contaminate terrain; unstable poisons primarily injure people and animals while terrain is partially contaminated (swamps, lowlands, bush clumps, ravines).

The Bacteriological Center of Contamination

The most probable objectives for employing bacteriological weapons will be chosen by the enemy and are large populated places, railroad junctions, food and feed warehouses, sources of water supply, animal breeding farms, meadows and pastures and plantings of agricultural crops. The enemy can employ atomizing of disease-causing microbes in the air from aircraft (the so-called aerosol method), can spread contaminated rodents (mice, rats, susliks), insects (flies, mosquitoes, ticks), and can also create diversions by contaminating sources of water, feed and food products. The bacteriological center of contamination is characterized by massive diseases of people and animals with a dangerous infectious disease. In order to prevent the further spread of diseases, the contaminated territory is quarantined. All treatment-prophylactic measures are carried out by special mobile antiepidemiological detachments of Civil Defense.

What Civil Defense Is

Civil Defense of the Soviet Union is a system of nationwide defensive measures carried out in advance, in peacetime, for the purpose of preparing the population, industrial objectives of the national economy and agricultural production for protection against nuclear, chemical and bacteriological weapons, as well as conducting rescue and emergency breakdown-repair operations in centers of destruction after the enemy's nuclear strike.

It is impossible to accomplish the entire combination of complex tasks only through the efforts of Civil Defense workers alone. Therefore, it must encompass all state and social organizations and must be the business of the entire people.

The Chairman of the Urban Executive Committee of the Council of Workers Deputies is appointed the Chief of Civil Defense of the City (settlement), and at the factory (plant), the Director fulfills this function. In the school, the Chief of Civil Defense is the Director. Headquarters are created under the Chiefs of Civil Defense. These maintain control when conducting measures of Civil Defense and control the activity of forces subordinate to them.

Civil Defense formations are created for conducting protective measures, rescue and emergency repair operations in centers of destruction (contamination). School children 16 years old can actively participate as a part of various Civil Defense formations. Students of the 5th - 9th grades obligatorily study Civil Defense according to a special program, become familiar with its fundamentals and acquire the necessary practical skills. From the students who have been trained according to this program, sanitary bands and sanitary posts are created in the schools (the sanitary posts predominantly consist of schoolgirls). School students are used for caring for patients in hospitals, in homes for the aged and invalids, in nurseries and kindergartens. In rural terrain, detachments formed from schoolchildren can be used for combating various agricultural pests, can participate in preparing animal breeding farms, feed warehouses and water sources for protection. In both the city and the country, schoolchildren can be used by local headquarters as runners (messengers), can stand communications duty, keep up with Civil Defense signals and carry out other instructions of seniors and supervisors of Civil Defense.

The experience of the Great Patriotic War has shown that school children and the pioneers of the hero cities of Leningrad, Moscow and Stalingrad rendered great aid to the population and various formations of the MPVO. Many of them earned high governmental decorations - orders and medals.

Methods and Means of Protection Against Weapons of Mass Destruction

Modern means of reconnaissance make it possible to detect preparations for war in advance, and consequently to warn the population of the threatened danger of the enemy's employing weapons of mass destruction. Of course, this tenet cannot be viewed as a rule. One must understand that the population will have an extremely limited time for taking vital measures of protection against weapons of mass destruction. The most probable objectives for the enemy's nuclear missile strikes are cities. People involved with production and service will be provided shelters. They must have the obligatory individual means of protection. The population can be warned of the threat of attack by radio, by the city and rural radio translator network and television.

The population designated for evacuation will be stated according to place of residence, in the ZhEK, the housing directorate, the street commission, where and at what assembly points it must appear. Children, the sick and disabled are evacuated first. Arriving at the assembly points, the evacuees should have documents on their persons proving identification, a reserve of supplies for 2 or 3 days (predominantly concentrated rations), and portable items. The items can be in a suitcase, rucksack or a sack outfitted for these purposes. The person's last name and address should be written on these containers in black pencil.

A limited time is set aside for evacuation. Assemblies and the dispatch of people will occur rapidly. At this time, schoolchildren can be of great aid to adults. They can be assigned to shut-off all electrical instruments, television sets, radios, gas, water, close windows, doors, and where furnaces exist, shut-off heat and flues. The keys to apartments and lists of who went where and who was evacuated to which evacuation point should be delivered to the ZhEK (residential building directorate), to the technician-inspector of the building or a designated responsible person.

Arriving at the evacuation post, one should register and await instructions concerning further actions. Upon the declaration to enter transport, one should take places in organized fashion indicated by the vehicle (railway car) senior. At the assembly post, school children can be given the assignment of sitting in order, in giving aid to patients, invalids, the aged and mothers with young children.

En route and at stops one should not drink water from open sources of water or eat unwashed fruit or vegetables. It is obligatory to wash the hands before eating.

If there is a signal warning of the danger of enemy attack during movement, one should accomplish the commands of the senior accompanying the vehicle (railroad car).

Upon arriving at the designated evacuation post, one should rapidly free the transport. The evacuees will be greeted by representatives of Civil Defense. They will indicate which buildings and apartments will be settled to the families that have arrived.

Local authorities are responsible for organizing the feeding and sanitary service of the population and for returning education of schoolchildren to normal. In the evacuation regions the class seniors can instruct the school children to carry out various work and can use them to assist the headquarters of Civil Defense.

The population in rural terrain must primarily be protected against

radioactive fallout in case of enemy nuclear strikes. Therefore, when creating the protective structures the basic requirement made on them will be reducing radioactive radiation and supplying air uncontaminated by radioactive dust.

The Shelter As a Reliable Method of Protection

The basic purpose of the shelter is to protect a person against the effect of radiation until its level outside the shelter decreases to the norm and does not pose a deadly hazard for people. This means that the time of staying in the shelter depends on the intensity of penetrating radiation during the explosion, the level of radiation created by radioactive fallout, and the obtained cumulative dose of radiation. In any region against which a nuclear attack is made, the population (within shelters and outside them) receives a certain dose of radiation from penetrating radiation during the explosion. After the explosion a person can receive a dose of radiation under the effect of radioactive fallout.

Dose power depends on the intensity of radiation and is determined by the dose in roentgens received over an hour. Although shelters reduce the dose of radiation, they cannot absolutely protect a person against it. The dose of radiation that a person receives in the shelter is the cumulative total of three factors. The first factor is the hazard only directly in the region of the explosion. The second is the dose of radiation a person receives inside the shelter during radioactive fallout. The third factor is radioactive radiation from fallout, to whose effect a person is exposed outside the shelter after he leaves it for various reasons, albeit for the very shortest time. The dose of short-term radioactive radiation received by a person over the course of the first four days should not exceed 200 r.

It is recommended to leave the shelter only when the intensity of radiation decreases to a safe level. Thus, if the dose of radiation over four days is 200 r, then people should not leave the shelters so long as the dose of radiation from radioactive fallout does not drop to 1.5 r per day.

The task of deactivation is in first place in importance after protection against the nuclear strike. Its successful accomplishment depends on the training of the formation, including the training of schoolchildren of the senior classes.

The removal of radioactive fallout from streets close to the school can be carried out with the active participation of schoolchildren and the crews and detachments equipped with the appropriate equipment made up of such schoolchildren. However, one should never rely on the highly technical gear and equipment everywhere. There is still an insufficient amount of it even in cities.

Therefore, in most rural regions, small cities and settlements, deactivation of terrain can be carried out by the aid of the simplest makeshift means - shovels, crowbars, rakes, etc. Deactivation makes it possible to reduce the total dose of radiation of people from 3 to 5 times. The difficulties involved with the deactivation of terrain persistently require the subsequent construction of collective and public shelters.

The required area for each person is determined by the time people stay in the shelters. This norm periodically changes, primarily decreasing. Thus, prior to 1960 in the USA it was 1.4 m² per person, and in 1961 - 0.9 - 1.1 m². It is presently 0.92 m². In general, it is considered abroad that people can stay over two weeks in shelters where 0.7 or even 0.5 m² is set aside per single person. Still, one cannot arbitrarily establish the norm of shelter area per person. It should be determined individually, taking many factors into account.

One should always remember that after a nuclear attack people can be in an extremely complicated situation and the shelter becomes their home for a long time. Therefore, each shelter must be viewed only in combination with the reserves of food, water, and the elementarily required conditions for human life created in it in advance.

Collective Means of Protection

As was already stated, collective shelters are the most expedient. Their reliability depends upon the degree of burial and stability, the fire resistance of the materials from which they are built (concrete, reinforced concrete, stone, brick, etc.). Shelters located under buildings should have a heat-insulating layer (made of sand, gravel, and other materials) for protection in case of fire. This layer is simultaneously a shock absorber in case of collapse of the building. Separately built shelters should be buried beneath a layer of earth no less than a meter thick.

Modern collective shelters have two exits and one more emergency exit. They are hermetically sealed so that contaminated air cannot penetrate inside the shelter. Steel or reinforced concrete, protective, hermetically sealed doors are mounted in the entrance platforms.

Purification of the outside air from radioactive dust, contaminated material and bacteria is carried out in the filter-ventilation system. Filtration-ventilation systems can differ in their capacity and design - from those made of makeshift materials to equipment manufactured by special plants. Such shelters provide for central heating, illumination, water supply and sewage. Inside they are equipped with benches (cots or beds) for rest. The shelter should have a supply of drinking water,

additional sources of electricity (storage batteries) or kerosene (gas) lamps, a pharmacy, a radio and a telephone. Furthermore, the shelter should have fire-fighting equipment, tools for emergency rescue operations and a supply of disinfectants.

In modern big cities with a developed system of underground structures, many of them can be easily and rapidly adapted for collective protection. These are subway, transport and pedestrian tunnels, and connecting tunnels between industrial buildings. They can withstand very heavy loads on stability. The only thing required is their additional hermetization and reequipment. Besides this type of shelter, in case of the threat of attack additional simplest shelters can be constructed. With modern earth-moving technology, manholes can be dug and construction organizations rapidly equip such protective structures from prefabricated reinforced concrete elements.

The simplest protective structures with a reinforced equipment (the cellars of buildings, cellar rooms of warehouses and other shelters) can also ensure protection against the harmful effects under urban conditions.

In rural terrain it is necessary to construct special facilities of the urban type because the probability that the countryside will be subjected to nuclear strikes is slight (the territory close to large cities is an exception). Therefore, in the village one should prepare such shelters as primarily reliably protect people against radioactive dust.

Shelters of the simplest type can be set up in the first floors and cellars of houses or can be constructed in open areas (vacant lots, large yards, gardens). Residential buildings, service areas, industrial structures, vegetable storage bins, warehouses, silage pits and bunkers can be used as shelters. The main thing for these rooms is that radioactive dust not penetrate them.

Shelters of the simplest type on the first floor of a stone building reduce the dose of radiation 5 - 10 times. If such a shelter is built in a dugout cellar or the area beneath the floor (basement) of a building, then the dose of radiation can be reduced 20 - 25 times. With additional refitting of the dugout cellar and piling earth or sand around the top of it, this dose (depending on the thickness of the layer of material) decreases from 50 to 100 times. But shelters made of makeshift materials have higher protective properties: stone, canes, adobe, branches, etc. Such shelters are built small - for 10 - 20 people. Their inside equipment should correspond to the same requirements as the urban shelters, with the only difference being that their filtration-ventilation system is made of makeshift materials.

The length of the stay in such shelters depends upon the degree of radioactive contamination of terrain. As in the urban shelters, they

should have supplies of food and water as well as medicines.

Individual Means of Protection

In addition to the collective means of protecting people (shelters and dugout shelters), the individual means are just as important. They protect the respiratory organs and skin and do not allow radioactive substances, poisons and bacterial means to penetrate within the body. The individual means are subdivided into means of protecting the respiratory organs and means of protecting the skin. The basic means of protecting the respiratory organs against radioactive substances, poisons and bacteria is the gas mask. The most widespread filtering gas masks among the population are the GP-4u for adults and the DP-6 and DP-6m children's models.

The filtering gas mask is very simple in construction. It consists of the antigas canister and the facial part (the mask). During the use of the gas mask, a proper fit of the mask has great significance. If the mask is large, then it will lie loosely against the face and contaminated air will unavoidably leak in under it. A tight mask constricts the face, causing skin pain or headache. The gas masks for adults come in three sizes and those for children in five.

The correct choice of the mask for adults is related to height, and that for children - with height and width of the face. The height of the face is measured from the bridge of the nose to the lower point of the chin, the width between the most prominent (protruding) points of the skull (see the table).

The size of the mask is indicated by an Arabic number on its lower right-hand part. In the traveling position the gas mask is carried on the left side by adults and on the right side by children. "Prepare" - the case is on the right side of the belly, unfastened and with the hose (line) attached around the waist, "In the Battle Position" - the mask is donned on the face. The mask is removed at the command "Remove".

Mask Size	For Adults	For Children	
	Height of Face, mm	Height of Face, mm	Width of Face, mm
First	99 - 109	up to 77	up to 108
Second.	109 - 119	77 - 85	108 - 116
Third	119 and over	85 - 92	111 - 119
Fourth.	—	92 - 99	115 - 123
Fifth	—	92 - 99	124 - 135

One should bear in mind that some gases (methane, carbon monoxide) are not kept out by the filtering gas masks. Special isolating gas masks are used for this purpose. For protection against radioactive dust, one can also use the simplest means such as respirators, antidust cloth masks (PTM-1), or cotton gauze bandages if there are no gas masks or the gas mask is not the right size.

The respirator consists of a filtering canister mounted together with a semimask which encloses the nose and mouth. The eyes must be protected by glasses. The antidust cloth masks and the cotton gauze bandages can be made by the schoolchildren themselves with a 100 X 50 cm piece of gauze. A layer of cotton wadding 30 X 20 cm in size and 2 - 3 cm thick is placed in the middle of the piece of gauze. Then the wadding is wound with gauze, stitched with a needle (or on a sewing machine), and the ends are cut for ties. The bandage must enclose the nose and mouth.

Special protective clothing serves to protect the human skin from contact with radioactive substances, poisons and bacteria. Ordinary work clothing with its appropriate adaptation can also be used for this purpose.

Special protective clothing is made from insulating or filtering materials. Protective clothing made of insulating material provides protection against liquid drop poisons and their vapor. Filtering clothing is impregnated with a special composition. Contaminated air, in passing through such material, is purified from impurities harmful for the human body.

Special protective clothing can be obtained by formations of Civil Defense manned by schoolchildren of the senior classes. Special clothing includes the following: the protective suit, the combination suit, the raincoat, the apron, rubber boots, leggings, rubber gloves, etc. Such clothing provides safety during a prolonged stay in contaminated terrain, and is used when conducting reconnaissance, rescue and emergency breakdown-repair operations in a center of destruction (contamination). Leather, silk, tricot gloves and canvas mittens can be used to protect the hands.

Schoolchildren today already need to master skills in independent preparation of cotton-gauze bandages or antidust cloth masks. They can also train in old clothes, having prepared them for hermetization. The purpose of such training sessions is to acquire skills of rapidly donning the means of protecting the respiratory organs and wearing them for a long time. It is useful to introduce a spirit of competition between groups, classes and schools at the training sessions.

During nuclear explosions, food products, feed and sources of water are contaminated by radioactive materials. The basic means of protection is their isolation from the external environment by hermetization in

warehouses, storage buildings and other areas. The schoolchildren used for this work carefully seal all openings and chinks.

It is recommended to store food in a closed container and small supplies of food in boxes covered with heavy paper. Animal fats and salted foods are stored in tightly sealed boxes, frozen oil (butter) and fish - in multilayer cardboard containers.

Under domestic conditions, food supplies can be reliably protected having placed them in a closed metal or glass container preliminarily lined with heavy paper (oil paper or cellophane) or oil cloth. It is recommended to store liquid products in a glass container (bottles, jars) and in thermoses. Perishable products (meat, milk, sausages, cheeses, etc.) and fruits are best stored in refrigerators (root cellars).

It is desirable to store vegetables in wooden or plywood boxes. These are lined on the inside with heavy paper and are covered with oil cloths or canvas on top. Water should be kept in a tightly closed container (barrels, cans, etc.).

In rural terrain where wells are used, it is vital to prepare them for hermetization in order to rule out radioactive dust's falling into them.

Feed can be preserved, also by sealing it off from the external environment. The protection of food, water, feed and other agricultural products against radioactive fallout, poisons and bacteria is very laborious and complicated work. It requires using nearly the entire population.

Duties of the Schoolboy During the Threat of Enemy Attack

In order not to be caught by surprise during an enemy attack, one must firmly master the duties and rules of behavior. Primarily, upon sounding the alarm, the entire population including schoolchildren is obliged to display a high degree of discipline and organization and to act calmly, confidently and capably. The duties of the population are determined in accordance with the plans of local Civil Defense Headquarters. One should know the signals of Civil Defense and be able to act in accordance with them.

The signal "Air Alarm" (AA - Soviet abbreviation VT) warns of the danger of a nuclear missile attack. It is given over the radio transmitter network, by electrical sirens and is duplicated by factory, plant and transport horns. At this signal one should rapidly take one's place in the nearest shelter or dugout shelter. If one hears the signal at home, one must turn off the electric heaters, gas, take documents which

attest to one's identity with one, take prepared products and water for 2 or 3 days and descend into the shelter. If the AA signal was given at school or at a lesson, then at the teacher's suggestion the students must leave their textbooks in place and leave with the entire class and occupy designated places in the shelter.

After the AA signal, schoolchildren of the senior classes are obliged to give aid to the younger ones in the shelters.

If the signal was given at a movie theater, a theater, in a store, on the streetcar or in a bus, then at the instructions of the administration, police or representatives of the Headquarters of Civil Defense citizens must enter the closest shelter (dugout shelter). In those cases when there are no shelters or dugout shelters in the vicinity (within 10 - 15 minutes of walking), one must take cover in any hole, ditch or ravine, utilizing the protective properties of terrain.

The signal "Chemical Attack" (CA - Soviet abbreviation KhN) warns of the enemy's use of poisons. The signal can be given by radio, television, or by horns or banging on a rail. At this signal one must don means of individual protection, and depending on the developed situation, act according to the command of representatives of the Civil Defense Headquarters.

The signal "Bacteriological Contamination" (BC - Soviet abbreviation BZ) warns of the enemy's use of bacteria. It is given over the radio.

The signal "Radioactive Contamination" (RC - Soviet abbreviation RZ) warns of the contamination of some stretch (region) of terrain by radioactive materials. The signal is given over the radio and can also be a sonic signal. At the signal one takes cover in places protected against radioactive fallout. In this case the individual means of protection should be fully ready.

Upon threat of the movement of a radioactive cloud of a nuclear explosion, the signal "Threat of Radioactive Contamination" (TRC - Soviet abbreviation URZ) is given over the radio in advance so that people can take shelter, animals and food products, sources of water and feed can be protected.

The signal "Cancellation of Air Alarm" (CAA - Soviet abbreviation OVT) is given over the radio when the hypothetical enemy attack did not occur. In this case one can remove the protective clothing and continue work in classes at school.

The rules of behavior when staying in shelters are determined by the local Civil Defense Headquarters, including those for school students.

With all of the specific aspects of local conditions, there are also general tenets that apply to the entire population in the rules of behavior according to signals of Civil Defense. The population must primarily be guided to shelters (dugout shelters) calmly, without fussing and screaming, in order not to create a nerve racking situation. One should enter the shelter rapidly, but one should not push others, one should aid the aged, invalids and women with children. Do not tarry in the doorways during entry into the shelter, and take up the designated place after entering the shelter.

It is forbidden to bring large objects, domestic animals, to bring inflammable liquids or items with a sharp unpleasant odor into public shelters with one. In the shelter it is vital strictly to observe the established social order. It is forbidden to smoke, whistle, sing songs or play reckless games.

Schoolchildren should aid the duty officer in servicing the filtration-ventilation device and observe internal order in the shelter.

During a breakage or malfunction of the power supply, sewage, water supply, during the threat of flooding and other various damages, one should seek-out the electrician or metal worker at the instructions of the shelter duty officer, and in their absence, be able to repair the damages one's self. If the shelter has been buried by a collapsed building or by earth from a close explosion, order must be maintained in it until the arrival of rescue teams, and if the emergency tool is available one must take emergency measures, organizing a rescue team from the people who are in the shelter.

If radioactive substances or poisons penetrate a damaged shelter, then at the first signs it is vital to don the means of protection and to act at the command of the duty officer, according to the plan developed in advance by the local Civil Defense Headquarters.

One must constantly remember that any means of protection, even one that is very primitive at first glance, can weaken the effect of the harmful factors many times. Having found one's self in contaminated terrain, one must primarily don the individual means of protection and strictly observe the rules of behavior: do not eat and do not drink.

In the destroyed city, one should try to walk along streets and alleys far from damaged buildings, since they can collapse, and one should walk against the wind from a center of chemical contamination. Having crossed the terrain contaminated with radioactive materials, it is vital to get one's shoes and clothing in order: shake-off one's clothing, brush-off dust, and after this carry out partial or complete sanitary processing.

One can only leave a territory contaminated with bacteria with the authorization of medical workers. Upon the appearance of a bacteriological center, a strict quarantine is imposed. Food products are supplied separately for each building and apartment. A special water regime is established and people are forbidden to use public sources of water. An active struggle is conducted against insects and rodents which carry infections and disease-producing microbes.

One of the basic duties of schoolchildren is to prepare individual means of protection both for themselves and for adults. With the warning of the threat of enemy attack, schoolchildren should have documents which prove their identity on their persons (the student ticket, the kom-somol ticket, and the senior classmen - the passport). Schoolchildren of the junior classes put a tag in their pocket (made of plastic or composition material) which indicates their last name, first name, middle name, year of birth, home address and school number.

In peacetime, every schoolboy should know the location of the closest shelters (dugout shelters) located near home or the school and the shortest way to them. If there is no prepared shelter, then one can take shelter in a cellar, dugout shelter, ravine, clay or sand pit, etc. To the point, schoolchildren can adapt these natural shelters under the observation of experienced instructors of military affairs, having constructed slit trenches and additional coverings. Every schoolboy should have a supply of products of the dry ration type and a flask of water for 2 or 3 days.

A great deal of work remains to be done by schoolchildren in preparing their own residences and schools in an antifire regard. For this purpose, Sunday and Saturday training sessions are held. Schoolchildren clean attics, barns and various utility rooms of trash and bulky items. Under the supervision of Civil Defense instructors or firemen, children check the working order of fire extinguishers, fire-cocks, and hoses and create supplies of water and sand in certain places. Stairwells, the entrances to shelters and the locations of fire-fighting equipment should be illuminated at night. With the direct threat of attack, one should organize watches, detaching schoolboys from the senior classes for this purpose. At the outbreak of fire, schoolboys participate in putting it out.

Practical Advice for Schoolboys

Rescue Operations

In order to eliminate the consequences of the enemy attack in centers of destruction, rescue and emergency accident-repair operations are organized by forces of the formations from the population.

Schoolboys predominantly of the senior classes can be used in the formations for conducting rescue operations. They are combined in groups of 25 to 30 people each and into units of 8 to 10 people each for convenience of controlling them. Such a group of schoolboys supervised by a specialist, physician, engineer, technician or Civil Defense instructor can carry out the following operations:

- a) extract casualties from beneath rubble, extract people pinned down by debris and give them first aid;
- b) transport casualties to safe places and send them to the corresponding medical posts (hospitals);
- c) extinguish small fires and prevent their spread;
- d) save material and cultural treasures and food products;
- e) participate in distributing products and water among the population located in buried shelters.

It is forbidden to act alone when conducting rescue operations. Having found serious malfunctions in the electric power system and gas installations, it is vital immediately to report this to special formations.

When extracting casualties from debris, one should plan the order of conducting the operations, having assigned each unit certain duties (in eliminating debris or extracting people, or rendering aid, etc.).

Having noted a fire, it is vital to attempt to prevent its spread and then to put it out. New foci often appear because of flying sparks (especially in the countryside). Having spotted them, one should immediately take measures to put out the fire and prevent subsequent outbreaks of fire.

In the Summer, if grain plantings are on fire, one can put out the fire by sprinkling with dirt. If a person's clothing has caught fire, one must try to cut-off the supply of air to the fire, flinging a canvas, overcoat or some other heavy material over the victim.

Sanitary Processing

Sanitary processing means the removal of radioactive materials or poisons from the skin and mucosa (the eyes, nose, and mouth), as well as from clothing. There are both partial and complete sanitary processing. Partial sanitary processing is carried out by each victim. With radioactive contamination, it is carried out wearing the individual means of protecting the respiratory organs.

Having removed the gas mask, the mouth is rinsed out, the face is washed and the eyes are irrigated. Complete sanitary processing is carried out at special posts with baths, laundries, showers, sanitary checkpoints or in areas set up near reservoirs in uncontaminated terrain. During sanitary processing one carefully washes the body with hot water and soap.

Decontaminating Clothing and Shoes

During decontamination radioactive dust is shaken or brushed from clothing and shoes and then washed from open parts of the body with tampons. The tampon is used on one side and then turned over. In Winter, the lower layer of clean snow can be used during the sponge bath.

Self-Aid and Mutual Aid in Centers of Destruction

During the strike, the schoolboy should always be able to render aid to himself and his comrade. In order to prevent radioactive particles from falling into a wound and contaminating it, during bandaging one should use sterile materials: individual packets, bandages and gauze. In case of strong hemorrhages from a wound on the arm or leg, it is vital to apply a tourniquet above the wound. If there is no medical tourniquet, it can be replaced by a handkerchief, a piece of material, a cord, a rubber cord, a strap, etc.

Bleeding can be stopped by compressing the hemorrhaging blood vessel (artery). In case of fractures it is vital to avoid moving the injured bones, for which purpose a stick, board, piece of plywood or metal netting is bandaged against the injured extremities. These play the role of splints and prevent movement of the blood vessel above or below the fracture. If the fracture is compound, a gauze pad is placed on the wound before applying the splint.

In cases of burns, the burn must be bandaged in order to protect the burned spot from contamination, and in case of extensive burns the victim is wrapped in a sheet and taken to the medical post.

One proceeds in exactly the same way in case of severe contusions, fainting, and injuries with great loss of blood.

The Training Session in Using the Individual Means of Protection

It is vital systematically to conduct training sessions, organizing competitions between groups, classes, and schools so that the schoolboy skillfully uses the individual means of protection. In individual cases it is also expedient to conduct training sessions in camp conditions when training the boys for militarized games in Civil Defense. The purpose of

such training sessions is to teach the schoolboys to use the individual means of protecting the respiratory organs and makeshift means of protecting the skin.

Using the gas mask. Before proceeding to the training session, one should inspect the gas mask - whether it has noticeable damages. Then one checks the gas mask for its seal. The supervisor of the training session gives commands and the schoolboys execute them, placing the gas mask in the position "Travel", "Ready", and "Combat". After this one should teach the schoolboys to use the gas mask with damaged to the mask and the connecting tube. The training session terminates with a test of whether the schoolboys correctly pack the gas mask in its bag.

The use of the antidust cloth mask. This training session has the goal of getting the schoolboy quickly and correctly to don and remove the mask. The PTM-1 mask is donned in the following sequence. The transverse rubber strap and attachment are shifted to the outside of the mask. One seizes the lower part of the mask with both hands and tightly pulls it up against the chin. The mask is attached to the head and pulled against the face. Having corrected the attachment on the head, the ends of the ties for the back of the head are tightened and tied and then the transverse rubber strap is pulled. The mask is removed in the reverse order, rolled up and placed in its case.

Use of the cotton gauze bandage. The cotton gauze bandage is placed on the face so that it tightly and fully covers the mouth and nose. The lower ends of the bandage are tied on the sincipital area and the upper ones are tied at the back of the head. Pieces of cotton are packed into the openings on both sides of the nose so that the bandage lies tightly against the face.

The Training Session in the Use of Makeshift Means of Protecting the Skin

During the training session the supervisor should observe that the schoolboys take measures for protection against radioactive substances and poisons and bacteria in the following sequence, using ordinary everyday clothing. First one must don the gas mask. Then the bottoms of the trouser legs are tied with tape (cord or twine). Afterward one must don the galoshes (rubber overshoes or boots), and if these are unavailable, then ordinary shoes which it is recommended to wrap with a thick layer of paper and sacking or some other material on top of it. Then one ties shut the sleeves of the jacket (windbreaker, shirt) with tape (cord), pulls the belt upward, raises the collar and wraps the neck in a scarf or triangular scarf. Then one dons the head gear - a garrison cap, cap or beret, the raincoat, overcoat, or cloak. The gloves are donned last.

The supervisor of the military classes first demonstrates how to use the gas mask, the antidust cloth mask, and the cotton-gauze bandage and then this is done several times by each student.

Training Property in Civil Defense for Classes

Gas masks (desirably, for each schoolboy, but no less than one for every two people).

Cotton-gauze bandages for the group of students.

Antidust cloth masks for each student.

Patterns for cutting out the antidust cloth mask of several sizes (for children).

Materials and containers for preparing impregnating solutions: 0.25 - 0.3 kg household soap, 0.5 kg mineral oil.

Individual packets - 6 - 10 (or bandages) for the group of students.

Antichemical packets - 6.

Sanitary stretchers (the simplest type) made by the schoolboys or carrying straps - 1.

Fire extinguishers - 1.

Picks and crowbars - 10.

Iron shovels - 6.

Slide projector (for showing slides).

Sets of Slides That Can Be Used During the Study of Methods of Protection Against Weapons of Mass Destruction in the School (Camp)

"Methods of Protection Against Weapons of Mass Destruction". Set - 7 slides (released in 1963).

"Rescuing People from Debris and Damaged Shelters" (released in 1960).

"Methods of Pulling Apart Debris and Eliminating Accidents" (released in 1960).

"Degassing, Disinfection and Decontamination of Personal Items" (released in 1960).

"Sanitary Processing of the Population in Centers of Destruction" (released in 1960).

"Sheltering and Dispersing the Population" (released in 1960).

"Means and Methods of Protecting and Decontaminating Food, Water and Feed" (released in 1958).

Motion Pictures That Can Be Used During the Study of Methods of Protection Against Weapons of Mass Destruction

"Schoolboy, Be Prepared for Civil Defense!", 2 parts (released in 1965).

"Civil Defense for the Population", 4 parts (released in 1964).

"Antichemical Protection of the Population", 5 parts (released in 1957).

"Have A Serious Attitude to This", one part (1964 release).

"Rules of Using Shelters for Protecting the Population", one part (released in 1964).

"What Everyone Must Be Able to Do", one part (released in 1964).

"The Antibacteriological Protection of the Population", 3 parts (released in 1963).

"Always Be Prepared", 3 parts (released in 1963).

"If A Danger Appears", 2 parts (released in 1964).

"The Simplest Methods of Degassing Clothing and Sanitary Processing of People", one part (1965).

"The Protection of Food, Feed and Water from Radioactive Materials", one part (1965 release).

"The Living Need the Sun", 2 parts (released in 1966).

"The Duty of Each", 2 parts (released in 1964).

"This Can Be Prevented", one part (released in 1966).

"All Can Serve", 2 parts, (released in 1965).

"First Aid During Burns", one part (released in 1966).

"An Invisible but Threatening Enemy", 2 parts (released in 1965).

Recommendations for Conducting Contests in the School (Camp)

When holding competitions between classes, units or detachments in the school (camp), personal and personal-command supremacy are determined. In the personal contests the superiority between young men and women is established separately, and in the command contests - separately between young men and women and mixed teams.

First place can be determined both according to each training task and according to the entire program of the competition (several training tasks). First place according to the training task is judged according to the smallest total of points received by the participants in the competition or by the crew for the quality and time of accomplishing the training task of the entire program. In case of a tie in the total sum of points, first place is awarded among the participants of the competitions or crews to the participant or crew which have the best indicators for accomplishment of the training task.

Training Tasks for Competitions

Training task No. 1 "Donning the Gas Mask from the "Ready" Position.

1. Composition of group - 5 (no more than 9) people.
2. Location - open area (in school corridor).
3. Materiel support - gas masks (of a single type) and stopwatch for the competition judge.
4. Sequence of accomplishing the task: schoolboys are formed in a rank, each person's gas mask is in the "travel" position. The judge gives the command "Gas Masks Ready!". The schoolboys shift the gas masks to the "Ready" position and the judge checks readiness.

At the command of the judge: "Gas!" - the stopwatch is started. The participants in the competition don their gas masks. When the last of the competitors dons the gas mask and lowers his hands the judge stops the stopwatch. The judge records the time separately for each schoolboy.

The accomplishment of task No. 1 is evaluated according to the expired time and the assessed penalty points for mistakes:

- a) for incompletely donning the gas mask, attaching straps and face mask - 7 points;
- b) for twisting the connecting tube - 5 points;

c) incorrect action when donning the gas mask (eyes open, failure to hold the breath, sharp inhalation not made) - 10 points;

d) for a poorly donned mask, when air penetrates beneath it - 15 points;

e) if the training task is accomplished in 12 seconds or less, then for each complete or partial second 1 point is assessed (if over 12 seconds are spent on the accomplishment of the training task then it is not counted).

Training task No. 2 "Deactivation of A Passage with Makeshift Means".

1. Group makeup - 5 (no more than 9) people.

2. Location - an area in open ground (size 20 X 5 m).

3. Materiel support: gas masks, PTM-1 masks or cotton-gauze bandages; protective clothing for the number of participants, buckets or garden watering pots, besoms (brooms), shovels, one set of warning signs; makeshift material for constructing the passage (plywood, poles, boards, bundles of branches, gravel, sand, etc.); a stopwatch for the judge.

The sequence of accomplishing the task: the group is formed at the starting point 10 - 15 m from the "contaminated stretch". The protective clothing and materials for laying the passage are also gathered there. At the command of the judge: "Gas!", the stopwatch is started. The participants in the competition don the protective clothing and form at the starting point. Stopwatch is stopped. The judge checks whether the protective clothing has been donned correctly.

At the command of the judge: "Lay Passages!" - the stopwatch is started and the competitors proceed to accomplish the training tasks by any of the accepted methods: by laying planking, by brushing-off (washing-off) radioactive materials, by sprinkling with dry insulating materials.

Having accomplished training task No. 2, the group with property is formed at the starting point in a single rank. The stopwatch is stopped.

The accomplishment of task No. 2 is evaluated the same as task No. 1 according to elapsed time and the assessment of points for errors:

a) for each complete and incomplete 5 seconds spent on the accomplishment of the training task one point is assessed;

b) for incorrectly donned protective clothing and gas masks penalty

points are assessed the same as in training task No. 1, "Donning the Gas Mask from the "Ready" Position";

c) a participant in the competition who removed the gas mask before the end of accomplishing training task No. 2 is thrown out of the contest and the group is assessed 15 penalty points;

d) for a carelessly laid passage interfering with its practical use - 20 penalty points.

The training tasks can be prepared by the supervisor independently for contests in setting up individual shelters and rendering first medical aid, etc.

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